

REMARKS

Claims 1-14 are pending in the application. These claims were rejected as follows:

Claims / Section	35 U.S.C. Sec.	References / Notes
Drawings	Objection	<ul style="list-style-type: none">• Lack of description
1-5, 8-10, 13 and 14	§103(a) Obviousness	<ul style="list-style-type: none">• APA, Figure 1a; and• Udd, et al. (Kim article)
6, 7, 11 and 12	§103(a) Obviousness	<ul style="list-style-type: none">• APA, Figures 1a, b; and• Udd, et al. (Kim article)

- 5 Applicant has cancelled claims 1, 8 and 9 directed to the open-loop embodiment of the invention. All remaining claims in the application are have been amended or are otherwise directed to the closed-loop embodiment of the invention.

REQUEST FOR INITIALED PTO-1449 PAPERS

- 10 1. *Applicant requests that the next communication received from the U.S. Patent Office include initialed PTO-1559 forms.*

- Applicant filed a first Information Disclosure Statement on April 14, 2003 and a second ("supplemental") Information Disclosure Statement on August 18, 2003. Initialed copies of these PTO-1449 forms associated with the respective
- 15 IDSs have not been received. Applicant respectfully requests that these initialed forms be provided with the next communication. Applicant will provide blank copies of these forms at the request of the Examiner.

**35 U.S.C. §103(a), CLAIMS 1-14 OBVIOUSNESS OVER APA, FIGS. 1A, B AND UDD
(KIM)**

2. *Applicant has cancelled or amended all claims in the application such*
5 *that they are directed to the closed-loop embodiment, and have further limited*
the closed loop embodiment such that the feedback mechanism adjusts the
frequency of the sawtooth modulation.

All claims directed to the open-loop embodiment of the invention have
been cancelled or amended such that the only remaining claims are directed to
10 the closed loop embodiment and furthermore that the loop closure is
accomplished by adjusting the frequency of the saw tooth modulation so that
there is a phase difference equal in magnitude and opposite in sign to the phase
difference induced by rotation of the gyroscope.

Support for the amended claim language may be found in paragraphs 51
15 and 52 of the Specification.

Claim 1 has been cancelled. Claim 6 has been amended to include the
limitations of claim 1, and to further specify that the feedback mechanism
induces the phase difference by adjusting the frequency of the saw tooth
modulation (hereinafter, "closed loop element"). Claims 3 and 5 have been
20 amended to depend from amended claim 6 instead of claim 1. Claim 8 has been
amended to include the closed loop element. Claim 9 has been cancelled, and
claim 10 has been amended to depend from claim 11 (claim 11 now includes the
closed loop element as well as the limitations of original claim 9). Claim 13 has

been amended to depend from claim 11. Claim 14 has been amended to include the closed loop element.

This closed loop variant of the present invention works differently from the closed loop variants according to the prior art because it adjusts the frequency of the saw tooth waveform and thus shifts the interferogram. The prior art systems require a serrodyne waveform having a magnitude of 2π in order to operate properly, whereas the present invention will not work if the magnitude is 2π . The present feedback mechanism makes the operation of the system centered around zero optical phase shift, which is where the system is the most sensitive and which permits the response to be maintained as linear (see paragraph [0051]).

The sawtooth drive is significantly different than the detected signal that reduces the sensitivity to cross coupling (see paragraph [0049] and compare Figs. 3a, 3b and 4a, 4b to Figs. 4c and 4d). The frequency of the saw-tooth waveform is substantially equal to the proper frequency of the system, but varied to offset the rate-induced phase-shift in the coil. This is not taught by the prior art. A complete copy of the Udd (Kim) reference has been attached to the Appendix of this Office Action.

For these reasons, the Applicant asserts that the amended claim language clearly distinguishes over the prior art, and respectfully request that the Examiner withdraw the §103(a) rejection from the present application.

CONCLUSION

Inasmuch as each of the objections have been overcome by the amendments, and all of the Examiner's suggestions and requirements have been satisfied, it is respectfully requested that the present application be reconsidered, the rejections be withdrawn and that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

 (Reg. No. 45,877)

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450 on December 10, 2003.


Mark Bergner Attorney for Applicants